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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/720,084	11/25/2003	Nobuaki Watanabe	2003_1657A	4863

513 7590 03/08/2007
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WASHINGTON, DC 20006-1021

EXAMINER

LE, TUAN H

ART UNIT	PAPER NUMBER
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2622

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/08/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/720,084	Applicant(s) WATANABE, NOBUAKI	
	Examiner Tuan H. Le	Art Unit 2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2 and 4-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamaguchi (U.S. Pat. 5,764,292).

Regarding **claim 1**, Yamaguchi discloses a blade driving device for use in cameras, the blade driving device comprising:

a mechanical blade (14) openably and closably disposed in front of an image pickup element (18), the mechanical blade being capable of blocking a part or all of light passing through an exposure aperture or capable of reducing light passing therethrough, (see Yamaguchi, Fig. 3 and column 2 lines 16-19);

an electromagnetic actuator (15) for enabling the blade to perform an opening motion according to opening energization and enabling the blade to perform a closing motion according to closing energization, (see Yamaguchi, Fig. 3 and column 2 lines 16-19); and

a control means (20) for drive-controlling the electromagnetic actuator and applying opening energization to the electromagnetic actuator so as to allow the blade to pre-perform an opening motion before performing a closing motion in each photographing operation, (see Yamaguchi, Fig. 3 and column 2 lines 33-39).

As for **claim 2**, as previously mentioned in the discussion of claim 1, Yamaguchi discloses all of the limitations of the parent claim. In addition, Yamaguchi discloses that the control means (20) applies opening energization to the electromagnetic actuator and then applies closing energization thereto when a releasing operation is performed, (see Yamaguchi, column 5 lines 5-15 and 30-58).

As for **claim 4**, as previously mentioned in the discussion of claim 1, Yamaguchi discloses all of the limitations of the parent claim. In addition, Yamaguchi discloses that the blade is a diaphragm blade that stops down the aperture to a predetermined aperture diameter, (see Yamaguchi, Fig. 4a-4c).

As for **claim 5**, as previously mentioned in the discussion of claim 1, Yamaguchi discloses all of the limitations of the parent claim. In addition, Yamaguchi discloses that the blade is an ND filter blade that reduces an amount of light passing through the aperture to a predetermined level, (see Yamaguchi, column 6 lines 3-11).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaguchi (U.S. Pat. 5,764,292) and further in view of Nishimura et al (U.S. Pat. 5,012,271).

As for **claim 3**, as previously mentioned in the discussion of claim 1, Yamaguchi discloses all of the limitations of the parent claim. However, Yamaguchi does not disclose a shutter blade that opens and closes the aperture.

On the other hand, Nishimura et al discloses shutter blades (2,7) in an exposure control device for an electronic still video camera, (see Nishimura, Fig. 1 and column 4 lines 19-24).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to add shutter blades as described by Nishimura et al to the blade driving device for use in cameras as described by Yamaguchi in order to close and open camera aperture because such addition permits the blade driving device to operate the shutter blades at high precision without requiring many parts, (see Nishimura, column 1 lines 65-68).

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaguchi (U.S. Pat. 5,764,292) and further in view of Jeong et al (U.S. Pat. 5,634,149).

Regarding **claim 6**, Yamaguchi discloses a blade driving device for use in cameras, the blade driving device comprising:

a mechanical blade (14) openably and closably disposed in front of an image pickup element (18), the mechanical blade being capable of blocking a part or all of light passing through an exposure aperture or capable of reducing light passing therethrough, (see Yamaguchi, Fig. 3 and column 2 lines 16-19);

an electromagnetic actuator (15) for enabling the blade to perform an opening motion according to opening energization and enabling the blade to perform a closing motion according to closing energization, (see Yamaguchi, Fig. 3 and column 2 lines 16-19); and

a control means (20) for drive-controlling the electromagnetic actuator and applying opening energization to the electromagnetic actuator so as to allow the blade to pre-perform an opening motion before performing a closing motion (see Yamaguchi, Fig. 3 and column 2 lines 33-39).

However, Yamaguchi does not disclose that an amount of light incident on the image pickup element becomes equal or less than a predetermined level in a photographic standby state.

On the other hand, Jeong et al discloses a light detector circuit (20) for producing a signal representing ambient light of a scene to be photographed before an image is capture in shutter mode, (see Jeong et al, Fig. 1). The brightness measuring of an

object by the light detector circuit can be repeated in accordance with a "Yes" condition in S670 before image capture S600, (see Jeong et al, Fig. 4).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to add the light detector circuit as described Jeong et al to the blade driving device as described by Yamaguchi in order to determine if an amount of light incident on the image pickup element becomes equal to or less than a predetermined level in a photographic standby state because such addition automatically and quickly notifies the blade driving device a significant brightness change has occurred.

As for **claim 8**, as previously mentioned in the discussion of claim 6, Yamaguchi and Jeong et al disclose all of the limitations of the parent claim. In addition, Yamaguchi discloses that the blade is a diaphragm blade that stops down the aperture to a predetermined aperture diameter, (see Yamaguchi, Fig. 4a-4c).

As for **claim 9**, as previously mentioned in the discussion of claim 6, Yamaguchi and Jeong et al discloses all of the limitations of the parent claim. In addition, Yamaguchi discloses that the blade is an ND filter blade that reduces an amount of light passing through the aperture to a predetermined level, (see Yamaguchi, column 6 lines 3-11).

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaguchi (U.S. Pat. 5,764,292) and further in view of Jeong et al (U.S. Pat. 5,634,149) and Nishimura (U.S. Pat. 5,012,271).

As for **claim 7**, as previously mentioned in the discussion of claim 6, Yamaguchi and Jeong et al disclose all of the limitations of the parent claim. However, Yamaguchi and Jeong et al do not disclose a shutter blade that opens and closes the aperture.

On the other hand, Nishimura et al discloses shutter blades (2,7) in an exposure control device for an electronic still video camera, (see Nishimura, Fig. 1 and column 4 lines 19-24).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to add shutter blades as described by Nishimura et al to the blade driving device for use in cameras as described by Yamaguchi and Jeong et al in order to close and open camera aperture because such addition provides the blade driving device to operate the shutter blades at high precision without requiring many parts, (see Nishimura, column 1 lines 65-68).

Claims 10, 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaguchi (U.S. Pat. 5,764,292) and further in view of Toguchi et al (U.S. Pat. 6,104,878).

Regarding **claim 10**, Yamaguchi discloses a blade driving device for use in cameras, the blade driving device comprising:

a mechanical blade (14) openably and closably disposed in front of an image pickup element (18), the mechanical blade being capable of blocking a part or all of light passing through an exposure aperture or capable of reducing light passing therethrough, (see Yamaguchi, Fig. 3 and column 2 lines 16-19);

an electromagnetic actuator (15) for enabling the blade to perform an opening motion according to opening energization and enabling the blade to perform a closing motion according to closing energization, (see Yamaguchi, Fig. 3 and column 2 lines 16-19); and

a control means (20) for drive-controlling the electromagnetic actuator and applying opening energization to the electromagnetic actuator so as to allow the blade to pre-perform an opening motion before performing a closing, (see Yamaguchi, Fig. 3 and column 2 lines 33-39).

However, Yamaguchi does not disclose that a signal is output from a shock sensor used to detect an impulsive force in a photographic standby state.

On the other hand, Toguchi et al discloses a shock sensor (28) for detecting impacts made on the main body of a camera. The shock sensor (28) senses an impact and sends an output signal to the CPU, (see Toguchi et al, Figs. 5-7 and column 9 lines 3-9).

Therefore, it would have been obvious to one in ordinary skill in the art at the time the invention was made to implement the shock sensor as described by Toguchi et al into the blade driving device as described by Yamaguchi in order to detect an impulsive force to a camera in a photographic standby state because such implementation immediately communicates environment condition to camera control.

As for **claim 12**, as previously mentioned in the discussion of claim 10, Yamaguchi discloses all of the limitations of the parent claim. In addition, Yamaguchi

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discloses that the blade is a diaphragm blade that stops down the aperture to a predetermined aperture diameter, (see Yamaguchi, Fig. 4a-4c).

As for **claim 13**, as previously mentioned in the discussion of claim 10, Yamaguchi discloses all of the limitations of the parent claim. In addition, Yamaguchi discloses that the blade is an ND filter blade that reduces an amount of light passing through the aperture to a predetermined level, (see Yamaguchi, column 6 lines 3-11).

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaguchi (U.S. Pat. 5,764,292) and Toguchi et al (U.S. Pat. 6,104,878) and further in view of Nishimura et al (U.S. Pat. 5,012,271).

As for **claim 11**, as previously mentioned in the discussion of claim 10, Yamaguchi and Toguchi et al disclose all of the limitations of the parent claim. However, Yamaguchi and Toguchi do not disclose a shutter blade that opens and closes the aperture.

On the other hand, Nishimura et al discloses shutter blades (2,7) in an exposure control device for an electronic still video camera, (see Nishimura, Fig. 1 and column 4 lines 19-24).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to add shutter blades as described by Nishimura et al to the blade driving device for use in cameras as described by Yamaguchi and Toguchi et al in order to close and open camera aperture because such addition permits the blade

driving device to operate the shutter blades at high precision without requiring many parts, (see Nishimura, column 1 lines 65-68).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Yaginuma et al (U.S. Pat. 6,547,457) discloses a camera shutter unit comprising a diaphragm blade, a shutter blade, and a driving-controlling mechanism.

Koyama et al (U.S. Pat. 4,119,986) discloses a control device of the shutter for a camera, which is equipped with shutter blades opening and closing an opening or the exposing operation.

Sangregory et al (U.S. Pat. 5,173,728) discloses a device for connecting a shutter blade to an electromagnetic camera shuttering system that utilizes an armature for producing a first magnetic field, and a stop to control the movement of a shutter blade.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan H. Le whose telephone number is (571) 270-1130. The examiner can normally be reached on M-Th 7:30-5:00 F 7:30-4:00.

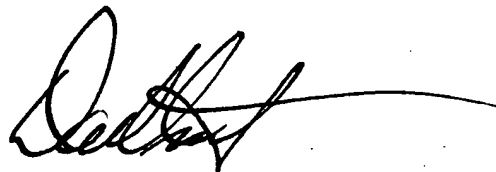
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David L. Ometz can be reached on (571) 272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Tuan Le
March 5, 2007



DAVID OMETZ
SUPERVISORY PATENT EXAMINER